

Appl. No. : 09/378,878
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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method ~~for~~ of analyzing data acquired by reading an optical disc having at least one readable analyte-specific signal element, said method comprising identifying a pattern in said data that reports a physical property of said at least one readable analyte-specific signal element, said reported physical property being a structural size of said at least one readable analyte-specific signal element measured in a substantially tangential selected direction.

2. (Previously Presented) The method according to claim 1 wherein said data include a digitized sample of at least one analog signal.

3. (Previously Presented) The method according to claim 2 wherein said at least one analog signal is derived from at least one signal selected from a group including a high frequency signal, a tracking error signal, and a focus error signal.

4. (Previously Presented) The method according to claim 3 wherein said at least one analog signal comprises at least two signals selected from a group including a high frequency signal, a tracking error signal, and a focus error signal to thereby form a combined analog signal.

5. (Previously Presented) The method according to claim 4 further including the step of quantizing said combined analog signal to form said data.

6. (Currently Amended) The method according to claim 5 wherein said said combined analog signal is formed by combining said at least two signals in a synchronized manner.

7. (Previously Presented) The method according to claim 211 further comprising the steps of:

quantizing each of said at least two analog signals to form individual digitized data sets; and

combining said individual digitized data sets to form said data.

8. (Previously Presented) The method according to claim 7 wherein said combining of said data sets comprises combining in a synchronized manner.

9. (Previously Presented) The method according to claim 2 wherein said digital sample is acquired in a substantially continuous manner.

10. (Previously Presented) The method according to claim 2 wherein said digital sample is acquired in a substantially non-continuous manner.

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11. (Previously Presented) The method according to claim 2 wherein said pattern is substantially continuous within said digitized sample.

12. (Previously Presented) The method according to claim 11 wherein said substantially continuous pattern corresponds to a length along a track in a radial direction.

13. (Previously Presented) The method according to claim 2 wherein said pattern is substantially discontinuous within said digitized sample.

14. (Previously Presented) The method according to claim 13 wherein said discontinuous pattern corresponds to at least one cluster of data features.

15. (Previously Presented) The method according to claim 14 including at least two of said cluster data features, each one thereof corresponding to different analyte-specific signal elements positioned along different turns of said disc.

16. (Previously Presented) The method according to claim 13 wherein said discontinuous pattern includes multiple data features that correspond to said at least one readable analyte-specific signal element.

17. (Previously Presented) The method according to claim 13 wherein said discontinuous pattern includes at least one discontinuity between two continuous regions, and said discontinuity itself reports a physical property of said at least one readable analyte-specific signal element.

18. (Cancelled)

19. (Currently Amended) The method according to claim ~~17~~ 18 wherein said discontinuity indicates that said continuous regions correspond to structures on the same turn of a track.

20. (Previously Presented) The method according to claim 17 wherein said discontinuity indicates that said continuous regions correspond to structures on different turns of said disc.

21. (Previously Presented) The method according to claim 14 wherein said identifying step includes associating result objects that correspond to said data features.

22. (Currently Amended) The method according to claim 14 wherein said reported physical property is a property disposed ~~tangentially~~ about 360 degrees apart on adjacent turns on said disc.

23. (Cancelled)

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24. (Previously Presented) The method according to claim 1 wherein said reported physical property inheres in said at least one readable analyte-specific signal element.

25. (Cancelled)

26. (Cancelled)

27. (Previously Presented) The method according to claim 24 wherein said reported property depends upon a position of said pattern in said data.

28. (Previously Presented) The method according to claim 27 wherein said at least one readable analyte-specific signal element produces a respective analog signal that has a substantial magnitude in at least two different turns of a disc.

29. (Previously Presented) The method according to claim 28 wherein said identifying step includes using the relative position of the pattern on the disc.

30. (Previously Presented) The method according to claim 28 wherein said identifying step includes reporting the size of a beat that crosses at least two different turns.

31. (Previously Presented) The method according to claim 1 wherein said identifying step includes identifying a plurality of readable analyte-specific signal elements.

32. (Previously Presented) The method according to claim 1 wherein said physical property depends at least in part upon disposition of said at least one readable analyte-specific signal element on said disc.

33-35. (Cancelled)

36. (Previously Presented) The method according to claim 32 wherein said reported physical property is independent of an absolute position of said pattern in said data.

37. (Previously Presented) The method of claim 32 wherein said reported physical property is dependent on a position of said pattern in said data.

38. (Cancelled)

39. (Currently Amended) The A method of analyzing data generated by reading a trackable optical disc having a plurality of physically non-identical concurrently readable analyte-specific signal elements, said method comprising identifying patterns in said data that distinguish among said physically non-identical concurrently readable analyte-specific signal elements, said identifying performed in a manner that is dependent on absolute position of said pattern in said data.

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40. (Previously Presented) The method according to claim 39 wherein said data are a digitized sample of at least one analog signal.

41. (Previously Presented) The method according to claim 40 wherein said at least one analog signal is derived from a signal selected from a group including a high frequency signal, a tracking error signal, and a focus error signal.

42. (Currently Amended) The method of claim 41 wherein said at least one analog signal comprises at least two signals selected from a group including a high frequency signal, a tracking error signal, and a focus error signal to thereby form a combined analog signal.

43. (Previously Presented) The method according to claim 42 further including the step of quantizing said combined analog signal to form said data.

44. (Currently Amended) The method of claim 43 wherein said said combined analog signal is formed by combining said at least two signals in a synchronized manner.

45. (Previously Presented) The method of claim 42 further comprising the steps of:
quantizing each of said at least two signals to form individual data sets; and
combining said individual data sets to form said data.

46. (Previously Presented) The method according to claim 45 wherein said combining said data sets comprises combining said data sets in a synchronized manner.

47. (Previously Presented) The method according to claim 40 wherein said digital sample is acquired in a substantially continuous manner.

48. (Previously Presented) The method according to claim 40 wherein said digital sample is acquired in a substantially non-continuous manner.

49. (Previously Presented) The method according to claim 40 wherein at least one of said patterns is continuous within said digitized sample.

50. (Previously Presented) The method according to claim 49 wherein said continuous pattern corresponds to a length along a track in a radial direction.

51. (Previously Presented) The method according to claim 40 wherein at least one of said patterns is discontinuous within said digitized sample.

52. (Previously Presented) The method according to claim 51 wherein said discontinuous pattern corresponds to at least one cluster of data features.

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53. (Previously Presented) The method according to claim 52 including at least two of said cluster data features, each one thereof corresponding to analyte-specific signal elements positioned along different turns of said disc.

54. (Previously Presented) The method according to claim 51 wherein said discontinuous pattern includes multiple data features that correspond to at least one of said analyte-specific signal elements.

55. (Cancelled)

56. (Previously Presented) The method according to claim 54 wherein at least one of said analyte-specific signal elements produces a discernable and substantial analog signal from only one turn of a track.

57. (Previously Presented) The method according to claim 54 wherein the plurality of analyte-specific signal elements comprises at least two classes of elements, said method further comprising counting the number of at least one class of said elements.

58. (Cancelled)

59. (Previously Presented) The method according to claim 57 wherein said at least one class of analyte-specific signal elements produces an analog signal that has a substantial magnitude in two or more different turns of a track.

60. (Previously Presented) The method according to claim 54 wherein said identifying comprises using relative positions of the patterns on the disc.

61. (Previously Presented) The method according to claim 39 wherein at least one of said patterns depends at least in part upon disposition of said analyte-specific signal elements on said disc.

62. (Previously Presented) The method according to claim 61 wherein said pattern depends on an optical interaction between a laser beam, at least one of said analyte-specific signal elements, and the disc.

63. (Previously Presented) The method according to claim 62 wherein said at least one analyte-specific signal element is a translucent bead and said optical interaction is a lensing effect of said bead.

64. (Cancelled)

65. (Cancelled)

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66. (Previously Presented) The method according to claim 39 further comprising the step of counting at least one of said patterns in said data.

67. (Previously Presented) The method according to claim 39 further comprising the step of outputting a report that includes results of said identifying.

68. (Previously Presented) The method according to claim 67 wherein said outputting includes displaying said report visually.

69. (Previously Presented) The method according to claim 68 wherein said displaying is on an electronic display.

70. (Previously Presented) The method according to claim 67 wherein said outputting includes printing said report on a tangible medium.

71. (Previously Presented) The method according to claim 67 wherein said outputting includes transmitting said report by sound.

72. (Previously Presented) The method according to claim 67 wherein said outputting includes transmitting said report remotely.

73. (Previously Presented) The method according to claim 67 wherein said outputting includes storing said report in a manner selected from a group including transient storing and permanent storing.

74. (Previously Presented) The method according to claim 39 wherein said trackable optical disc includes at least one spiral track.

75-132. (Cancelled)

133. (Currently Amended) ~~The A~~ method for analyzing data, said method comprising ~~the steps of:~~

retrieving data acquired from a trackable optical disc with concurrently readable analyte-specific signal elements, said data being retrieved from a source selected from a group including a direct data source and a stored data source, and wherein said data are selected from a group including operational data, analyte-specific signal element data, and a combination of operational data and analyte-specific signal element data;

analyzing said data;

generating at least one result object; and

outputting said at least one result object.

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134. (Previously Presented) The method according to claim 133 further comprising the step of initializing at least one program parameter before analyzing said data.

135. (Currently Amended) The method according to claim 134 wherein said initializing includes initializing at least one parameter selected from a group including a memory allocation parameter, a form parameter, and a combination of a memory allocation parameter and a form parameter.

136. (Previously Presented) The method according to claim 134 wherein said initializing includes setting said at least one program parameter to a default value.

137. (Cancelled)

138. (Currently Amended) ~~The method of claim 133~~ A method of analyzing data, said method:

retrieving data acquired from a trackable optical disc with concurrently readable analyte-specific signal elements, said data being retrieved from a source selected from a group including a direct data source and a stored data source, wherein said retrieving includes retrieving data from a direct data source that provides a data stream;

analyzing said data;

generating at least one result object; and

outputting said at least one result object.

139. (Currently Amended) ~~The method according to claim 133~~ A method of analyzing data, said method comprising:

retrieving data acquired from a trackable optical disc with concurrently readable analyte-specific signal elements, said data being retrieved from a source selected from a group including a direct data source and a stored data source, wherein said retrieving includes retrieving at least one data record from a stored data source;

analyzing said data;

generating at least one result object; and

outputting said at least one result object.

140. (Previously Presented) The method according to claim 139 wherein a respective data record includes at least one data item.

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141. (Previously Presented) The method according to claim 140 wherein a respective data record includes between 1 and about 30,000 data items.

142. (Previously Presented) The method according to claim 139 wherein said at least one data record includes at least two data records of differing sizes.

143. (Previously Presented) The method according to claim 139 wherein said at least one data record includes at least two data records of the same size.

144. (Previously Presented) The method according to claim 133 wherein said source is predetermined.

145. (Previously Presented) The method according to claim 133 wherein said source is determined by an external process.

146. (Previously Presented) The method according to claim 133 wherein said source is determined by a user.

147. (Cancelled)

148. (Cancelled)

149. (Previously Presented) The method according to claim 133 wherein at least one of said retrieving and said analyzing steps includes filtering said data.

150. (Previously Presented) The method according to claim 149 wherein said data corresponds to an amount of data, and said filtering includes reducing said amount of data.

151. (Previously Presented) The method according to claim 133 further comprising the step of acquiring said data using an optical disc reader.

152. (Previously Presented) The method according to claim 151 wherein said optical disc includes at least one start of record marker that triggers said acquiring, said acquiring step including detecting said start of data marker; and generating at least one data record in response to said detecting said start of data marker.

153. (Previously Presented) The method according to claim 152 wherein said acquiring step further includes detecting an end of data marker; and terminating said acquiring in response to said detecting said end of data marker.

154. (Previously Presented) The method according to claim 153 wherein said detecting a start of data marker, said generating data record, said detecting an end of data marker, and said terminating said generating are repeatedly performed, and said data includes data features between said generated data records.

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155. (Previously Presented) The method according to claim 154 wherein said acquiring occurs between a start of record marker and an end of data marker on said disc.

156. (Previously Presented) The method according to claim 155 wherein said markers are logical or physical markers.

157. (Previously Presented) The method according to claim 133 further comprising the step of filtering said data before said retrieving step.

158. (Cancelled)

159. (Currently Amended) ~~The method according to claim 158~~ A method of analyzing data, said method comprising:

retrieving data acquired from a trackable optical disc with concurrently readable analyte-specific signal elements, said data being retrieved from a source selected from a group including a direct data source and a stored data source;

analyzing said data, wherein said act of analyzing step includes processing one or more data records and distinguishing operational data features from analyte-specific signal element data features;

generating at least one result object; and

outputting said at least one result object.

160. (Previously Presented) The method according to claim 159 wherein said distinguishing yields at least one of said operational data features.

161. (Previously Presented) The method according to claim 160 wherein said at least one of said operational data features corresponds to a structure that is selected from a group including a tracking information structure, an address information structure, a disc speed indicating structure, and an end of data structure.

162. (Previously Presented) The method according to claim 159 wherein said distinguishing includes decoding at least one data record.

163. (Previously Presented) The method according to claim 162 wherein said decoding includes identifying at least one of said analyte-specific signal element data features and counting said analyte-specific signal element data features.

164. (Previously Presented) The method according to claim 162 further including the step of notifying at least one other process for further processing.

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165. (Previously Presented) The method according to claim 163 wherein said identifying includes applying threshold criteria to said at least one data record.

166. (Previously Presented) The method according to claim 165 wherein said applying includes applying to said at least one data record at least one criterion selected from a group including amplitude, sign, magnitude, slope, time period, and width.

167. (Previously Presented) The method according to claim 159 wherein said distinguishing according to characterizing at least one data feature according to a method selected from a group including shape analysis, Fourier analysis, auto-correlation, and masking.

168. (Previously Presented) The method according to claim 167 wherein said characterizing includes characterizing a cluster of data features in at least one data record.

169. (Currently Amended) ~~The method according to claim 133~~ A method of analyzing data, said method comprising:

retrieving data acquired from a trackable optical disc with concurrently readable analyte-specific signal elements, said data being retrieved from a source selected from a group including a direct data source and a stored data source;

analyzing said data;

generating at least one result object, wherein said act of generating includes generating at least one chart selected from a group including a map chart, a jitter chart, and a histogram chart; and

outputting said at least one result object.

170. (Previously Presented) The method according to claim 169 wherein said generating includes generating a map chart having at least one visible object selected from a group including a mapping marker and a viewable class.

171. (Currently Amended) ~~The method according to claim 133~~ A method of analyzing data, said method comprising the steps of:

retrieving data acquired from a trackable optical disc with concurrently readable analyte-specific signal elements, said data being retrieved from a source selected from a group including a direct data source and a stored data source;

analyzing said data;

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generating at least one result object, wherein said result object is selected from a group including a simple result object that includes a single structure and a composite result object that includes a plurality of structures; and
outputting said at least one result object.

172. (Previously Presented) The method according to claim 171 wherein said generating is selected from a group including continuously generating during said retrieving and generating after said retrieving.

173. (Previously Presented) The method according to claim 172 wherein said generating is performed upon detection of a feature in said data.

174. (Previously Presented) The method according to claim 133 further comprising the step of transmitting said objects to other processes.

175. (Cancelled)

176. (Cancelled)

177. (Currently Amended) ~~The method according to claim 176~~ A method of analyzing data, said method comprising:

retrieving data acquired from a trackable optical disc with concurrently readable analyte-specific signal elements, said data being retrieved from a source selected from a group including a direct data source and a stored data source;

analyzing said data;

generating at least one result object;

providing a user an ability to select one of said result objects before said outputting, wherein said providing includes providing said user an ability to manipulate said result object before outputting and wherein said ability to manipulate is selected from a group including zooming in on, panning to, and resizing said result object; and

outputting said at least one result object.

178. (Previously Presented) The method according to claim 133 wherein said outputting is selected from a group including storing, displaying, and printing.

179. (Previously Presented) The method according to claim 133 wherein any one of said retrieving, analyzing, generating, and outputting is performed iteratively.

180. (Currently Amended) ~~The method according to claim 133~~ A method of analyzing data, said method comprising:

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retrieving data acquired from a trackable optical disc with concurrently readable analyte-specific signal elements, said data being retrieved from a source selected from a group including a direct data source and a stored data source;

analyzing said data;

generating at least one result object wherein said act of generating includes calculating debug information, and said act of outputting includes outputting said debug information; and
outputting said at least one result object.

181. (Previously Presented) The method according to claim 133 wherein said trackable optical disc includes at least one spiral track.

182-206. (Cancelled)

207. (Previously Presented) The method according to claim 3 wherein said at least one analog signal is derived from said high frequency signal and said tracking error signal.

208. (Previously Presented) The method according to claim 3 wherein said at least one analog signal is derived from said high frequency signal and said focus error signal.

209. (Previously Presented) The method according to claim 3 wherein said at least one analog signal is derived from said tracking error signal and said focus error signal.

210. (Previously Presented) The method according to claim 3 wherein said at least one analog signal is derived from said high frequency signal, tracking error signal, and said focus error signal.

211. (Previously Presented) The method according to claim 1 wherein said data include a digitized sample of at least two analog signals.

212. (Previously Presented) The method according to claim 31 including the further step of counting said plurality of readable analyte-specific signal elements.